The Development of Liberal Arts and Sciences

| DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD |
|--|
| $ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$ |
| |
| |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| In Math We Trust \Box Technological Singularity \Box Alpha Go Zero \Box superhuman \Box |
| |
| |
| |
| |
| |
| |
| |
| |

| 00000000000000000000000000000000000000 |
|--|
| |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| |
| 00000000000000000000000000000000000000 |
| 00000000000000000000000000000000000000 |
| |
| |
| 00000013 000014 $000000000000000000000000000000000000$ |
| |
| |
| |
| 00000000000000000000000000000000000000 |
| |
| |
| |
| 17 000000000000000000000000000000000000 |

| $ \begin{bmatrix} 10 \end{bmatrix}_{00000000000000000000000000000000000$ |
|--|
| 000000000000000000000000000000000000 |
| 00000000000000000000000000000000000000 |
| |
| |
| 00000000000000000000000000000000000000 |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| |
| |
| $18 \Box $ |
| |
| |
| |
| $\verb $ |
| |
| |

| $\begin{array}{cccccccccccccccccccccccccccccccccccc$ |
|---|
| |
| |
| |
| |
| 000000000000000000000000000000000000 |
| |
| |
| 00000000000000000000000000000000000000 |
| |
| |
| |
| 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| 000000000000000000000000000000000000 |
| |

| $ \begin{array}{c} 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0$ |
|---|
| leukotomy Forrest Gump |
| |
| $\begin{array}{c} \verb $ |
| |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| 00000000000000000000000000000000000000 |
| |
| $20 \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$ |
| $\begin{tabular}{lllllllllllllllllllllllllllllllllll$ |
| 00000000 leukotomy 000000000000000000000000000000000000 |
| 00000000000000000000000000000000000000 |
| Universal approximation theorem |

| 00000000000000000000000000000000000000 |
|--|
| |
| 00000000000000000000000000000000000000 |
| 00000000000000000000000000000000000000 |
| 0000000000 SAE level 5000000000000000000000000000000000000 |
| □ Deep Blue □□□Demis Hassabis □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ |
| |
| |
| Deep Blue 000000000000000000000000000000000000 |
| |
| 00000000000000000000000000000000000000 |
| Occam's Razor |
| |

| One Gu Test A Progressive Measurement Of Generic Artificial Intelligence |
|--|
| 00000000000000000000000000000000000000 |
| |
| |
| |

| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
|---|
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| |
| 000000000000000000000000000000000000 |
| |
| |
| |
| |
| |
| |
| |
| |
| ARM CPU OS OS OS OS OS OS OS |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| 00000000000000000000000000000000000000 |

| $\frac{1920}{00000000000000000000000000000000000$ |
|---|
| |
| 00000000000000000000000000000000000000 |
| |
| |
| 00000000000000000000000000000000000000 |
| 00000000000000000000000000000000000000 |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| 00000000000000000000000000000000000000 |
| |
| |
| |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| 000000000000000000000000000000000000000 |

| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
|---|
| |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| |
| |
| 00000000000000000000000000000000000000 |
| |
| |
| |
| |
| |
| |
| DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD |
| |
| |

~~~~~~~~~

| [2] 000000000000000000000000000000000000                 |
|----------------------------------------------------------|
| [3] 000000000000000000000000000000000000                 |
|                                                          |
| 00000000000000000000000000000000000000                   |
| [4] DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD                 |
| In Math We Trust                                         |
| DDDDDDDDDDDDDDDDDTechnological Singularity               |
| [5] 000000000000000000000000000000000000                 |
| 00000000000000000000000000000000000000                   |
| [6] DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD                 |
| [7] 000000000000000000000000000000000000                 |
|                                                          |
| [8] DDDDDDDDDDDJJohn Philoponus                          |
| 000 Ibn al-Haytham 000000000000000000000000000000000000  |
| [9] DDDDDD architect DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD |
| [10]                                                     |
|                                                          |
| [11] personality                                         |

| 00000000000000000000000000000000000000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 0000 personality 000000000000000000000000000000000000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 00000000000000000000000000000000000000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| [12] DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| [13]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| [14] 000000000000000000000000000000000000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| [15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [[15] [ |
| 00000000000000000000000000000000000000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 00000000000000000000000000000000000000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| [16] 20 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| [17]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 00000000000000000000000000000000000000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| 00000000000000000000000000000000000000                |
|-------------------------------------------------------|
|                                                       |
| [21] DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD             |
|                                                       |
|                                                       |
|                                                       |
| $[22] \\ 0000000000000000000000000000000000$          |
|                                                       |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
|                                                       |
| $000001917 \ 00000000000000000000000000000000000$     |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| 0000000000000000000000000000000000000                 |
|                                                       |
|                                                       |
|                                                       |
|                                                       |

## Technological Singularity ППП

| 000000000 leukotomy 000000000000000000000000000000000000                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [26]                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                                   |
| 00000000000000000000000000000000000000                                                                                                                                                                                                                                                                            |
| [27] [] The Guadian [] [] [] a meta-solution to any problem [] AGI [] [] [] [] [] [] [] [] [] [] [] [] []                                                                                                                                                                                                         |
| "Demis Hassabis is deadly serious when he tells me he is on a mission to 'solve intelligence, and then use that to solve everything else'.                                                                                                                                                                        |
|                                                                                                                                                                                                                                                                                                                   |
| 'One way of thinking of AGI is as a process that will automatically convert unstructured information into actionable knowledge. What we're working on is potentially a meta-solution to any problem.'",                                                                                                           |
| $\frac{https://www.theguardian.com/technology/2016/feb/16/demis-hassabis-artificial-intelligence-deepmind-alphago \square}{}$                                                                                                                                                                                     |
| [28] DDAlphaGo Zero DDDDDDDDDAlphaGo Zero DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD                                                                                                                                                                                                                                    |
|                                                                                                                                                                                                                                                                                                                   |
| 00 737 Max 00000000000000000000000000000000000                                                                                                                                                                                                                                                                    |
|                                                                                                                                                                                                                                                                                                                   |
| "In thousands of tests, nothing like this had ever happened,' he said.", Boeing Built Deadly Assumptions Into 737 Max, Blind to a Late Design Change, <a href="https://www.nytimes.com/2019/06/01/business/boeing-737-max-crash.html">https://www.nytimes.com/2019/06/01/business/boeing-737-max-crash.html</a> . |
| Built Deadly Assumptions Into 737 Max, Blind to a Late Design Change,                                                                                                                                                                                                                                             |

| [31] The Selfish Gene (or The Immortal Gene) [][][][][][][][][][][][][][][][][][][] |
|-------------------------------------------------------------------------------------|
|                                                                                     |
| [33]                                                                                |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$                               |
|                                                                                     |
| 00000000000000000000000000000000000000                                              |
|                                                                                     |
|                                                                                     |
| DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD                                              |
| [34]                                                                                |
|                                                                                     |
| [35] BRAIN Initiative Moonshot                                                      |

| [37]                                                  |
|-------------------------------------------------------|
|                                                       |
| [38] Intel Intel CPU CPU                              |
| 00000000000000000000000000000000000000                |
|                                                       |
| [39]                                                  |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| smartphone                                            |

| [40] DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                             |
| [41] 000000000000000000000000000000000000                                                                                                                                                                                                                                                                                                                                                                                   |
| $ \begin{tabular}{lllllllllllllllllllllllllllllllllll$                                                                                                                                                                                                                                                                                                                                                                      |
| 00000000000000000000000000000000000000                                                                                                                                                                                                                                                                                                                                                                                      |
| □ The Selfish Gene □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□                                                                                                                                                                                                                                                                                                                                                                       |
| "0000"00000000000000000000000000000000                                                                                                                                                                                                                                                                                                                                                                                      |
| 00000000000000000000000000000000000000                                                                                                                                                                                                                                                                                                                                                                                      |
| [43] "On 28 July, after reading Serbia's reply, Wilhelm commented, 'But that eliminates any reason for war' or 'every cause for war falls to the ground'Wilhelm's sudden change of mind about war enraged Bethmann Hollweg, the military, and the diplomatic service, who proceeded to sabotage Wilhelm's offer.", from <a href="https://en.wikipedia.org/wiki/July_Crisis">https://en.wikipedia.org/wiki/July_Crisis</a> . |
|                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 00000 Wilhelm                                                                                                                                                                                                                                                                                                                                                                                                               |
| 00000 Wilhelm 000000000000000000000000000000000000                                                                                                                                                                                                                                                                                                                                                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 00000000000000000000000000000000000000                                                                                                                                                                                                                                                                                                                                                                                      |
| 00000000000000000000000000000000000000                                                                                                                                                                                                                                                                                                                                                                                      |
| 00000000000000000000000000000000000000                                                                                                                                                                                                                                                                                                                                                                                      |

| 00000000000000000000000000000000000000    |
|-------------------------------------------|
|                                           |
| 00000000000000000000000000000000000000    |
| [48] 000000000000000000000000000000000000 |
|                                           |
|                                           |
|                                           |
| 00000000000000000000000000000000000000    |
| [49]                                      |
| 00000000000000000000000000000000000000    |
|                                           |
|                                           |
|                                           |
| 0000000"0000"0000000000000000000000000    |
| 00000000000000000000000000000000000000    |
|                                           |

| 00000000000000000000000000000000000000                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 00000000000000000000000000000000000000                                                                                                                                 |
| 00000000000000000000000000000000000000                                                                                                                                 |
| [51] Leukotomy [] [] [] [] [] [] Moniz [] [] [] [] [] [] [] [] [] [] [] [] []                                                                                          |
| Moniz [][][][][][][][] leukotomy[]"for his discovery of the therapeutic value of leucotomy in certain psychoses."[][] leukotomy [][][][][][][][][][][][][][][][][][][] |
| 00001eucotomy 000000000000000000000000000000000000                                                                                                                     |
| leukotomy                                                                                                                                                              |
| [52] "Second US town pays up to ransomware hackers", <a href="https://www.bbc.com/news/technology-48770128">https://www.bbc.com/news/technology-48770128</a>           |
|                                                                                                                                                                        |
|                                                                                                                                                                        |
|                                                                                                                                                                        |
|                                                                                                                                                                        |